



Hill Air Force Base



Ogden Air Logistics Center

Tactical Shelters/Radomes & Towers
500 CBSS/GBLE - Hill AFB, UT



Composite Technology Insertion

JOCOTAS
2-4 Nov 2009

Air Force Tactical
Shelters/Radomes/Towers
Product Group

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Agenda

Ogden Air Logistics Center

- **Mission**
- **Composite Program**
 - Overview/Teaming
 - Shelter projects
 - Towers/Radomes
- **SBIR**



Mission/Background

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- **USAF Single Manager for Shelters/Radomes/Towers**
- **Direct world-wide mobile depot maintenance**
- **Products integrated into multiple weapon systems**
- **Support system programs**
 - Acquisition
 - Sustainment
 - Logistics





Composite Initiative

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- **Objective**
 - Replace corroded structures with composite structures
 - Shelters/Radomes/Towers
- **Advantages**
 - Composites not subject to corrosion
 - Withstand harsh environments
 - Increased performance
 - Reduced maintenance costs
 - Increased life cycle
 - Customizable
 - Reduced environmental burden
 - Safety





Teaming Partners/Sponsors



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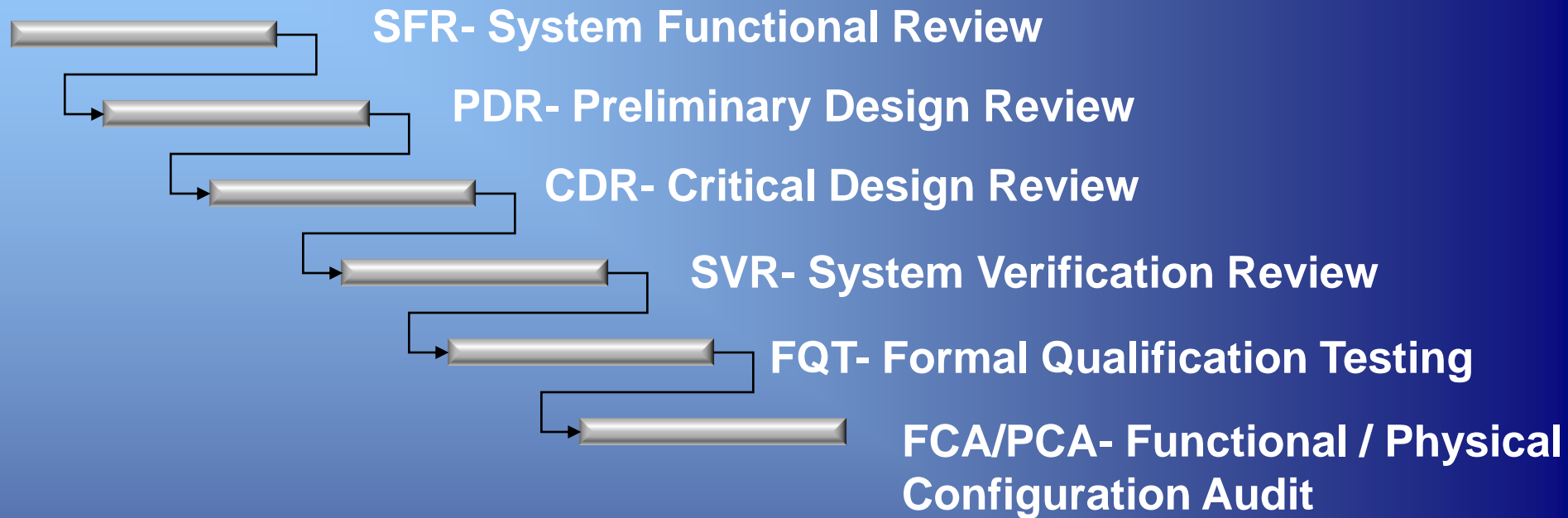
- JOCOTAS
- ARMY
- NAVY
- Air Force
- FAA
- NWS
- NASA
- ANG
- AFMC
- PACAF
- AFSPC
- AFWA
- AFMOA
- ACC
- 15+ Contractors
 - Large/Small
 - SBIR





System Engineering Approach

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Composite Shelter Program

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- **Objective**

- Next generation composite shelter development
 - Variety of mission requirements
 - Fixed site/tactical shelters
- Field new shelters at competitive price
- Reduction of corrosion maintenance
- Performance improvement/weight reduction





Stony/Yukon Ranges – Eielson AFB

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- **Objective**
 - Composite shelter with enclosed power/communication systems
 - Replace TIS units at Stony/Yukon Ranges
- **Status**
 - Completed prototype and subsequent units
 - Installed communication systems with remote monitoring capability
 - Stony completed summer 2006
 - Yukon complete fall 2009
- **Upcoming Tasks**
 - Replace extreme cold weather fixed site shelters with composites as required



Tracking Instrumentation Subsystem (TIS)





Moffett TACAN Shelter/Tower

Ogden Air Logistics Center

- **Objective**

- Replace TACAN building with composite tower/shelter
- 1st ever composite TACAN shelter/system

- **Status**

- Installation June 2009
- PCA Sept 2009

- **Upcoming Tasks**

- Finalize build to print drawings





Curacao TACAN Shelter/Tower

Ogden Air Logistics Center

- **Objective**
 - Replace TACAN tower/building with composite tower/shelter
- **Status**
 - Installation Sept 2009
- **Upcoming Tasks**
 - Finalize build-to-print drawings
 - Identify future customers





USAFE Shelter

Ogden Air Logistics Center

- **Objective**
 - Replace corroded weather radar shelter with composite shelter for USAFE (Germany)
- **Status**
 - Composite Shelter Installation Completed Fall 2006
- **Upcoming Tasks**
 - Anticipate additional customers with similar requirements





NAVY BMF ISO Shelter

Ogden Air Logistics Center

- **Objective**
 - DEM/QUAL an 8'x8'x20' Composite BMF ISO Shelter
- **Status**
 - Multiple prototypes tested
 - Conducted ISO development testing
 - Testing stalled (funding constraints)
- **Upcoming Tasks**
 - Ground mobility SAE AS8090
 - Establish production line for long-term procurement

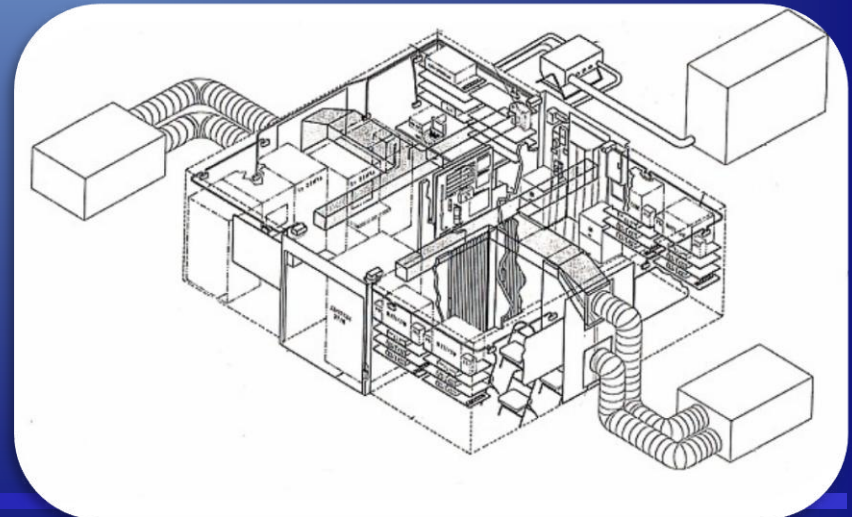




DDF System (non-composite)

Ogden Air Logistics Center

- **Objective**
 - Build 5 DDF's for F-22 Program
 - USAF Shelter Shop (Hill AFB)
- **Status**
 - Start Oct 2009/End Apr 2011
- **Upcoming Tasks**
 - Add'l DDF's per customer reqt's
 - Strong candidate for composite replacement
 - USAF
 - Competitive pricing
 - Performance increase
 - RTOC





Composite Tower Solutions

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2003-2005

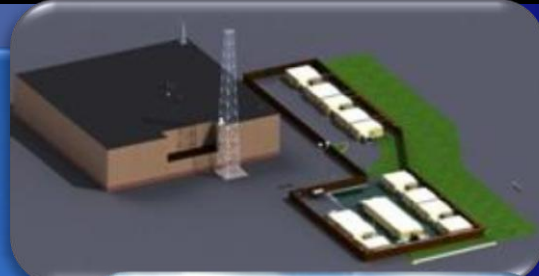
2006

2007

2008

2009

2010





Composite Radome Solutions

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2005

2006

2007

2008

2009

2010





SBIR Program Overview

Ogden Air Logistics Center

- **Small Business Innovative Research (SBIR) Program**
 - Utilizing since mid 1990's
 - Over 25 SBIR topics
 - Over 45 awardees'
 - Recent audit shows Product Group has one of the highest success rates





Composite Shelter SBIR Topics

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Topic #	Description of SBIR Topic
AF02-268	Development of ISO Composite Tactical Shelter
AF03-279	Ultra-Violet (UV) Deterioration Resistant
AF04-264	Chemical, Biological, or Radiological (CBR) Agent
AF04-269	Thermo-Plastic Materials Replacement for Metal or Composite Structures
AF05-270	Low Cost Composite Tactical Shelter Components with Integral Electro-Magnetic Interference (EMI) Shielding Capability
AF05-273	Automated Control Delivery of Pigmentation for Composite Tactical Shelters
AF05-278	Hybrid Materials for Fire Resistant Composites
AF06-345	Blast Resistant Panels
AF06-347	Low Cost Wear Resistant Composites



Many SBIR topics have all been incorporated into shelter design

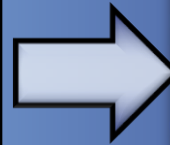
Over 25 SBIR Topics



Composite Tower SBIR Topics

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Topic #	Description of SBIR Topic
AF04-264	Advanced Composite Structure Members for Tall Narrow Structures
AF06-339	Advanced Frangible Composite Structure
AF06-341	Advanced Rigid Composite Tower



Over 25 SBIR Topics



Composite Radome SBIR Topics

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Topic #	Description of SBIR Topic
AF06-342	Advanced Thermoplastic Radome
AF06-346	Delamination & Water Intrusion Detection
AF07-113	Non Delaminating Hydrophobic Radome Materials
AF07-114	Identification of Rigidity & Damping of Radome



Over 25 SBIR Topics



Questions



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Questions?